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ABSTRACT

Students were surveyed who took the American College Testing Program test, enrolled in the Grand Valley State Colleges in the fall of 1973, and were still enrolled in fall 1975. Based on a sample of 40 students, these results were shown: over a quarter had changed majors; the overall distribution of majors had not changed; over a third anticipate different occupational choices, and most are generally less sure of their choices; highest degree aspirations rose; not many who felt they needed educational help actually asked for it, and students participated in student activities less than they anticipated; the extent to which good faculty and financial aid offers were considered major influences on college choice increased; and good faculty replaced availability of special study programs as the single most important influence on college choice.
(Author/MSE)

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# Stability of Educational Needs, Educational Aspirations, and College Choice Factors (As Expressed on the American College Testing Program Assessment)

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June 1976

HE 010 141

## Highlights of Findings

Based on a sample of forty (40) students, the following changes took place in students who took the American College Test, enrolled in GVSC in the Fall of 1973, and were still enrolled Fall, 1975:

1) 27.5% are enrolled in a different major area than they anticipated.

2) There were no significant net changes in the numbers of students choosing various major areas.

3) 37.5% now anticipate a different occupational choice than they did when they took the ACT.

4) The students are now more unsure of their occupational choice than they were when they took the ACT.

5) Highest collegiate degree aspirations went up. The percentage now anticipating a master's degree increased and, correspondingly, the percentage anticipating a bachelor's degree decreased.

6) A low percentage who indicated that they needed educational assistance actually sought such help at GVSC.

7) The students actually participated in activities at GVSC to a much lesser extent than they anticipated.

8) The extent to which "good faculty" and "financial aid offers" were considered major influences on college choice increased.

9) "Good faculty" replaced "availability of special study programs" as the single most important influence on college choice.

## Background

When students take the American College Test, generally as juniors or seniors in high school, they fill out a Student Profile Questionnaire on which they indicate information about their educational aspirations and needs, their home and school environment, and factors which they feel are important in college choice.

With respect to educational aspirations, educational needs, and factors important in the choice of a college, the question arises relative to the stability of these factors. How realistic were the indications made by high school students on the ACT assessment when compared to responses they give after actually being in college for a couple of years? When the students expressed a need for educational assistance or a desire to participate at the college level in certain activities, did they actually follow-through once they reached the collegiate level?

This paper tries to answer these questions for students who took the ACT assessment and subsequently enrolled at Grand Valley State Colleges.

## Methodology

We had in our Fall, 1975, student body 280 students who met the following criteria:

1) They started at GVSC in Fall, 1973.

2) They were enrolled Fall, 1974.

3) They had taken the ACT assessment prior to enrollment.

Thus, the 280 students represented a group on which we had responses to the ACT Profile questionnaire while they were in high school, and they had two years of college work at Grand Valley subsequent to this. If we could get their current responses to selected questions which paralleled some of the original questions on the ACT Profile, we could then examine the stability of those original responses.

The list of 280 students, in alphabetical order, was serially numbered and a table of random numbers was used to select a sample of 50 students to be contacted. Telephone calls to the random sample group were made during December, 1975. We were unable to make telephone contact with 10 students after 40 individual attempts. Successful contact was made with 40 students. Thus, the data reported is based on a 14.3% random sample (40/280 x 100).*

The 40 students were asked to respond to nine items which paralleled questions they had originally responded to on the ACT assessment. These current responses were then compared to the original responses.

*See appendix for sample bias testing results.

Where appropriate, the difference in the number or percentage of students who responded to an item on the ACT versus the telephone survey was tested for statistical significance at the 95% confidence level. The testing was done using the formula $Z = \frac{P_1 - P_2}{\sqrt{PQN/N_1N_2}}$ where $P_1$ & $P_2$ are proportions of the group responding to an item, $P = P_1 + P_2$, $Q = 1 - P_1 - P_2$, and $N_1$ & $N_2$ are numbers of persons in each group, and $N = N_1 + N_2$. The differences are significant at the 95% confidence level when $-1.96 > Z > +1.96$.

Results

1) Stability of Educational Major

On the ACT, students were asked to indicate their proposed educational major. In the telephone survey, they were asked for their current major or area of concentration.

Table #1

| Educational Major | Original | | Current | | Differences Significant? | % making no change |
|---|---|---|---|---|---|---|
| | # | % | # | % | | |
| Undecided | 1 | 2.5 | 1 | 2.5 | No | 0.0 |
| Education | 6 | 15.0 | 3 | 7.5 | No | 50.0 |
| Social Science & Religion | 5 | 12.5 | 6 | 15.0 | No | 80.0 |
| Business, Political, Persuasive | 10 | 25.0 | 15 | 37.5 | No | 90.0 |
| Scientific | 5 | 12.5 | 6 | 15.0 | No | 100.0 |
| Agricultural | 0 | 0.0 | 0 | 0.0 | No | NA |
| Health Professions | 8 | 20.0 | 5 | 12.5 | No | 62.5 |
| Arts & Humanities | 2 | 5.0 | 3 | 7.5 | No | 100.0 |
| Engineering | 3 | 7.5 | 1 | 2.5 | No | 33.3 |
| Trade & Industrial | 0 | 0.0 | 0 | 0.0 | No | NA |
| Other | 0 | 0.0 | 0 | 0.0 | No | NA |
| Total | 40 | 100.0% | 40 | 100.0% | | 72.5% |

Comments:

a) 72.5% of the students were still in the major area of their original choice.
b) Arts & Humanities and Scientific major choices showed the greatest stability, while Engineering and Education showed the least.

c) In net effect, the area of Business, Political, and Persuasive showed the largest gain from original choice to current choice, while Education and Health Professions showed the largest net loss. However, none of the net changes are statistically significant at the 95% confidence level.

2) Stability of Occupational Choice

On the ACT, students were asked to indicate their first choice of occupation. In the telephone survey they were asked to indicate their current occupational choice.

Table #2

| Occupational Choice | Original | | Current | | Differences Significant? | % making no change |
|---|---|---|---|---|---|---|
| | # | % | # | % | | |
| Undecided | 2 | 5.0 | 8 | 20.0 | Yes | 50.0 |
| Education | 9 | 22.5 | 9 | 22.5 | No | 77.8 |
| Social Sciences & Religion | 4 | 10.0 | 1 | 2.5 | No | 25.0 |
| Business, Political, Persuasive | 10 | 25.0 | 11 | 27.5 | No | 70.0 |
| Scientific | 4 | 10.0 | 3 | 7.5 | No | 50.0 |
| Agricultural | 0 | 0.0 | 0 | 0.0 | No | NA |
| Health Professions | 8 | 20.0 | 5 | 12.5 | No | 62.5 |
| Arts & Humanities | 1 | 2.5 | 1 | 2.5 | No | 100.0 |
| Engineering | 0 | 0.0 | 0 | 0.0 | No | NA |
| Trade & Industrial | 2 | 5.0 | 2 | 5.0 | No | 50.0 |
| Other | 0 | 0.0 | 0 | 0.0 | No | NA |
| Total | 40 | 100.0% | 40 | 100.0% | | 62.5 |

Comments:

a) There was less overall stability in occupational choice (62.5%) than there was ir educational major (72.5%).
b) Arts & Humanities and Education showed the most stability (100.0%, 77.8%), while Social Sciences & Religion (25.0%) showed the least.
c) The Undecided category showed the greatest net gain, while Social Sciences & Religion and Health Professions showed the greatest net loss. The only statistically significant change was an increase in the number who are undecided. One could conjecture that this is a result of the current job market. The difficulty current college graduates are having in finding jobs may be causing these currently enrolled students to be less sure of their occupational choice.

3) Stability of Degree Aspirations

On the ACT, students were asked, "What is the highest level of education you expect to complete?" In the telephone survey they were asked to indicate the highest academic degree they hoped to obtain.

Table #3

| Highest Degree Sought | Original | | Current | | Differences Significant? | % making no change |
|---|---|---|---|---|---|---|
| | # | % | # | % | | |
| Bachelor's | 23 | 57.5 | 9 | 22.5 | Yes | 21.7 |
| Master's | 10 | 25.0 | 20 | 50.0 | Yes | 40.0 |
| Doctor of Philosophy or Education | 2 | 5.0 | 5 | 12.5 | No | 0.0 |
| Doctor of Medicine or Dentistry | 1 | 2.5 | 0 | 0.0 | No | 0.0 |
| Law | 3 | 7.5 | 4 | 10.0 | No | 66.7 |
| Other | 1 | 2.5 | 2 | 5.0 | No | 0.0 |
| Total | 40 | 100.0% | 40 | 100.0% | | 27.5 |

Comments:

a) There was considerable change in degree aspirations. Only 27.5% have the same aspiration now that they had as high school students.
b) The general shift in degree aspirations is upward as evidenced by a drop from 57.5% to 22.5% in those thinking that the baccalaureate degree would be their highest.
c) Those who originally indicated a law degree showed the greatest stability (66.7%).

4) Educational Needs

Students were originally asked if they felt they needed assistance in the areas of choosing a major or improving skills in reading, math, study, or writing. In the telephone survey, they were asked if they had sought assistance in these areas.

Table #4

| Area | Needed Help # | Needed Help % that sought help | Did Not Need Help # | Did Not Need Help % that sought help | Differences in % that Sought Help Significant? |
|---|---|---|---|---|---|
| Choosing Major | 6 | 16.7% | 33 | 21.2% | No |
| Improving Reading Skills | 3 | 0.0% | 36 | 5.6% | No |
| Improving Math Skills | 13 | 30.8% | 26 | 3.8% | Yes |
| Improving Study Skills | 10 | 0.0% | 28 | 14.3% | No |
| Improving Writing Skills | 8 | 25.0% | 32 | 21.9% | No |

Comments:

a) Very few of those students who felt they had a need for assistance in the five areas while in high school actually sought help once they arrived at GVSC.

b) Some of the students who did not feel the need of help when in high school actually did seek help after enrolling at GVSC.

c) The only area where there is a significant difference in the percentage who actually sought help was in improving math skills. In this case, the students who thought they needed help did seek such help in higher numbers than those who indicated they did not need help.

d) Students who indicated that they did seek help were asked where such help was sought. 50% sought help from a professor or advisor, 42% by taking specific courses, 4% from the Counseling Center, and 4% from friends.

e) In some respects, the information in Table #4 is rather puzzling in the four areas of improving skills. Except in the area of improving math skills, whether or not the students indicated that they needed help in skill areas while in high school made no significant difference in whether they actually sought such help in college. Perhaps this situation is caused by the lack of understanding of the academic expectations they would encounter in college. In other words, the students may not be able to realistically answer this question while still in high school. In order to further investigate this question, the original ACT scores of those students were grouped according to their indication of need for help in skill areas and whether or not they actually sought such help.

The results are shown in Table #4A.

Table #4A

Mean Scores on ACT

| Area | Needed Help | | Did Not Need Help | | Total | |
|---|---|---|---|---|---|---|
| | Total | Sought Help | Total | Sought Help | Sought Help | Did Not Seek Help |
| Improving Reading Skills* | 15.7 | -- | 22.8 | 13.5 | 13.5 | 22.8 |
| Improving Math Skills* | 20.6 | 18.0 | 24.0 | 28.0 | 19.7 | 23.3 |
| Improving Study Skills* | 20.3 | -- | 22.6 | 19.0 | 19.0 | 22.5 |
| Improving Writing Skills* | 20.0 | 23.5 | 19.7 | 19.4 | 20.3 | 19.6 |

* The scores that were used to check the objectivity of the data in each area were:

Improving Reading Skills - ACT Social Studies
Improving Math Skills - ACT Mathematics
Improving Study Skills - ACT Composite
Improving Writing Skills - ACT English

Even though the numbers of students represented by the mean scores in Table #4A are small, a certain pattern does develop. The writing skills area is an anomaly; perhaps the ACT English test is not a good indicator of writing skills. In the other three areas, we see that:

Those who felt they needed help had lower mean scores than those who didn't.

Out of each group, those who actually sought help had lower mean scores than those who didn't.

In total, those who sought help had lower mean scores.

This data could mean that the actual ACT scores themselves are better indicators of whether or not a student will really seek help in selected skills areas than the students' responses to the direct question posed on the ACT assessment.

5) Anticipated Participation

On the ACT, students were asked if they planned to participate in certain activities once they entered college. The telephone survey asked if they actually had participated in those areas.

| Area | Intended to Participate # | Intended to Participate % that did participate | Did Not Intend to Participate # | Did Not Intend to Participate % that did participate | Differences in % that Did Participate Significant? |
|---|---|---|---|---|---|
| Independent Study | 21 | 28.6 | 18 | 11.1 | No |
| Freshman Honors Program | 6 | 0.0 | 32 | 18.8 | No |
| Advance Placement-English | 8 | 0.0 | 30 | 0.0 | No |
| Advance Placement-Math | 7 | 28.6 | 32 | 6.3 | No |
| Instrumental Music | 6 | 33.3 | 33 | 0.0 | Yes |
| Vocal Music | 8 | 37.5 | 30 | 0.0 | Yes |
| Campus Publications | 14 | 14.3 | 23 | 0.0 | No |
| Student Government | 12 | 8.3 | 25 | 0.0 | No |
| Debate | 10 | 10.0 | 27 | 0.0 | No |
| Ethnic Organizations | 4 | 0.0 | 34 | 2.9 | No |
| Fraternities or Sororities | 15 | 6.7 | 26 | 0.0 | No |
| Religious Organizations | 8 | 12.5 | 29 | 13.8 | No |
| Political Organizations | 16 | 12.5 | 21 | 0.0 | No |

Comments:

The only areas where a significant difference in the percent actually participating exists are in vocal and instrumental music. Here, an intent to participate actually results in higher participation.

6) Major Influence on Choice of College

The students were asked to indicate whether they would consider the following factors as major or minor influences on their choice of a college on the ACT. In the telephone survey, they were asked to indicate which of the factors they would now consider as "major influences."

Table #6

| Influences | Major on ACT (% of 40) | Major in Telephone Survey (% of 40) | Differences Significant? | % Making No Change |
|---|---|---|---|---|
| Intellectual Atmosphere | 60 | 68 | No | 83 |
| Good Faculty | 78 | 98 | Yes | 97 |
| High Scholastic Standards | 70 | 58 | No | 46 |
| Availability of Special Study Program | 73 | 33 | Yes | 38 |
| Social Opportunity | 65 | 35 | Yes | 42 |
| Good Athletic Program | 20 | 15 | No | 50 |
| Low Cost | 65 | 78 | No | 77 |
| Financial Aid Offer | 43 | 70 | Yes | 76 |
| Location | 80 | 53 | Yes | 59 |
| Size | 65 | 60 | No | 50 |
| Parents' Influence | 58 | 10 | Yes | 17 |
| High School Teachers' Influence | 38 | 8 | Yes | 7 |
| High School Counselors' Influence | 45 | 18 | Yes | 28 |
| College Admissions Counselor | 25 | 25 | NA | 30 |
| Campus Visit or Tour | 48 | 48 | NA | 53 |

Comments:

a) The influence of availability of special study programs, social opportunities, location, parents' influence, and the influence of high school personnel all decreased as major influences from the ACT to the current time.
b) Good faculty and financial aids offers became more significant.
c) The fact that six of the areas decreased in influence and only two increased shows a narrowing of the major influence with added maturity and experience. One could also characterize these changes as showing more pragmatism and less external influence after two years of college.
d) The most consistent influence was "good faculty," as indicated by the fact that 97% of those that said it was a major influence on the ACT also responded that way on the telephone survey.

7) Single Most Important Influence on College Choice

From the list in item 6, students were asked to indicate which was the single most important influence on college choice.

Table #7

| Influence | Single Most Important Influence on ACT (% of 40) | Single Most Important Influence on telephone survey (% of 40) | Differences Significant? | % Making No Change |
|---|---|---|---|---|
| Intellectual Atmosphere | 0 | 15 | Yes | NA |
| Good Faculty | 3 | 25 | Yes | 0 |
| High Scholastic Standards | 8 | 8 | No | 33 |
| Availability of Special Study Program | 35 | 3 | Yes | 7 |
| Social Opportunity | 3 | 3 | No | 0 |
| Good Athletic Program | 0 | 3 | No | NA |
| Low Cost | 3 | 10 | No | 100 |
| Financial Aid Offer | 0 | 5 | No | NA |
| Location | 10 | 10 | No | 25 |
| Size | 5 | 10 | No | 50 |
| Parents' Influence | 10 | 0 | Yes | 0 |
| High School Teachers' Influence | 0 | 0 | No | NA |
| High School Counselors' Influence | 8 | 0 | No | 0 |
| College Admissions Counselor | 0 | 0 | No | NA |
| Campus Visit or Tour | 5 | 8 | No | 50 |
| Undecided | 13 | 0 | Yes | 0 |

Comments:

a) On the ACT survey, the availability of special study programs was chosen most often as the single most

important influence on college choice. After two years at GVSC, this influence dropped to being the choice of only 3% of the students. At the same time, "good faculty" changed from being the most important influence in 3% of the cases to 25% of the cases.

b) Low cost, size, and the campus visit or tour showed the most consistency of choice between the two samplings.

## Appendix

The randomly drawn sample of 40, which is described on page 1, was tested to see if the process produced a biased sample.

The sample of 40 was compared as a group against the remaining group of 240 who were not drawn in the sampling process. The comparison between the two groups was made using the Chi-Square technique and the sample was considered unbiased (not significantly different from the non-sample group) on the characteristics examined if the significance of the Chi-Square statistic was greater than .05.

### A) Background Characteristics Bias Testing

The two groups were compared on sex, size of high school graduating class, number of years out of high school when the ACT was taken (to approximate age factor), and ACT composite score along with self-reported high school grade point average (as measures of educational background).

| Factor Compared | Chi-Square Statistic | Degrees of Freedom | Significance |
|---|---|---|---|
| Sex | 2.20030 | 2 | .33282 |
| Size of High School Class | 2.76017 | 4 | .59873 |
| Years out of High School | 2.64108 | 2 | .26699 |
| ACT Composite Score | 15.96295 | 21 | .77173 |
| High School Grade Average | 7.38105 | 12 | .83144 |

Since all of the significances of Chi-Square were considerably higher than .05, it is assumed that a bias on these characteristics did not result from the sampling process.

### B) Responses to Original ACT Student Profile Questionnaire

Since this paper concerns itself with changes over time, several original response categories were checked for sample bias in order to rule out the possibility that any changes over time were a factor of original response sample bias.

| Factor on Student Profile Questionnaire | Chi-Square Statistic | Degrees of Freedom | Significance |
|---|---|---|---|
| Highest Degree Sought | 4.48487 | 9 | .87671 |
| Educational Major | 10.29429 | 9 | .32719 |
| Occupational Choice | 7.24575 | 9 | .61155 |
| Most Important Influence on College Choice | 16.27878 | 16 | .43368 |

Again, no bias was assumed because of the magnitude of the Chi-Square significance.